REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-4, 6-12, 24-25, 27-43, 45-47, 49-66, and 68-88 are pending in the present application, Claims 1, 2, 4, 24, 28, 45, 47, 66, and 83-88 having been amended, and Claims 5, 23, 26, 44, 48, and 67 having been canceled, by the present amendment, without prejudice or disclaimer. Applicants respectfully submit that the amendments to Claims 1, 2, 4, 24, 28, 45, 47, 66, and 83-88 are supported by the original claims and the specification, and do not include new matter.

In the outstanding Office Action, Claims 83-87 were rejected under 35 U.S.C.§101 as not directed to statutory subject matter; Claims 13, 23, 28-33, and 44 were objected to; Claim 2 was rejected under 35 U.S.C. §112, second paragraph; Claims 1-5, 12-15, 18-27, 34-35, 38-48, 55-58, 61-69, 74-76, and 79-88 were rejected under 35 U.S.C. §103(a) as unpatentable over Girod et al. (U.S. Patent No. 6,310,962, hereinafter Girod) in view of Chung et al. (U.S. Patent No. 6,310,962, hereinafter Chung); and Claims 6-11, 16-17, 36-37, 49-54, 59-60, 70-73, and 77-78 were objected to for depending from a rejected base claim, but were otherwise indicated as including allowable subject matter.

Applicants thank the Examiner for the indication of allowable subject matter. However, these claims have been presently maintained in dependent form because Applicants consider the amended pending independent Claims patentably distinguishing over the applied art.

With respect to the rejection of Claims 83-87, Applicants have amended Claims 83-87 to be directed toward a computer-readable medium. Thus, Applicants respectfully submit that Claims 83-87 are directed toward statutory subject matter, and this ground of rejection is believed to be overcome.

With respect to the objection to Claim 13, Claim 13 is amended as suggested in the outstanding Office action, and this ground of rejection is believed to be overcome.

With respect to the objection to claims 23, Applicants respectfully submit that this ground of objection is rendered moot by the cancellation of Claim 23.

With respect to the objection to Claims 28-33, Claim 28 is amended to remove the multiple dependency. Thus, Claim 28 (and dependent Claims 28-33) are in proper form and are in condition to be examined on the merits.

With respect to the rejection of Claim 2 under 35 U.S.C. §112, second paragraph, Applicants have amended Claim 2 to recite "intelligible data." Furthermore, the fact that the outstanding Office Action takes the position that the language "intelligible data" is broad enough to include intelligible data distinguishable by a human or that which is distinguishable by a computer, does not render claim indefinite. MPEP §2173.04 states "Breadth of a claim is not to be equated with indefiniteness. *In re Miller*, 441 F.2d 689, 169 USPQ 597 (CCPA 1971)." Thus, it is respectfully submit that the rejection of Claim 2 under 35 U.S.C. §112, second paragraph, is overcome.

With respect to the rejection of Claim 1 as unpatentable over Girod in view of Chung, Applicants respectfully submit that the amendment to Claim 1 overcomes the this ground of rejection. Amended Claim 1 recites, *inter alia*,

> the substantially invertible algorithm being applied by the method of modifying the material to the effect of defining a group of the said representations and transposing pseudo randomly said representations in said group by determining whether one or more transpositions of the representations of the group exist which do not increase the number of entropy encoded bits and selecting the, or one of the, transposed groups or the untransposed group in accordance with a value of a pseudo random number.

Neither Girod nor Chung teach or suggest these elements of amended Claim 1.

Girod discloses a conventional arrangement in which a watermark signal is used to modulate a pseudo random bit sequence which is used in the DCT domain to combine with DCT coefficients of the image to be watermarked. The addition of each DCT coefficients of the watermark is done in a way which tests whether that coefficient will increase the number of bits in the compression encoded image. If there is an increase in the number of compression encoded bits, then the corresponding DCT coefficients of the watermark signal is not added to the DCT coefficients of the image signal.

Contrary to Girod, amended Claim 1 is directed to a method in which the modification and entropy encoding of the digital representations is performed by a substantially invertible algorithm. The invertible algorithm defines a group of the digital representations of the transform coefficients of the information signals and transposes those digital representations pseudo randomly and selectively. As a result, the algorithm for making the modifications is substantially invertible and arranged not to increase substantially the number of entropy encoded bits.

Therefore, Girod does not disclose or suggest transposing pseudo randomly selected visual representations of a defined group, determining whether one or more of transpositions of the group do not increase the number of entropy encoded bits, and selecting the, or one of the, transposed or untransposed groups in accordance with the value of the pseudo random number.

Furthermore, Applicants note that the claimed invention provides a novel and non-obvious method of watermarking in which an encoded bit stream can be modified to introduce a watermark without increasing substantially the number of encoded bits and allowing for the watermark to be removed so that in effect the watermark algorithm is invertible.

Furthermore, Applicants respectfully submit that Chung does not cure the above-noted deficiencies in Girod.

In view of the above-noted distinctions, Applicants respectfully submit that Claim 1 (and Claims 2-4 and 6-22) patentably distinguish over Girod and Chung, taken alone or in proper combination. In addition, Claims 24, 45, and 66 are similar to Claim 1. Thus, Applicants respectfully submit that Claims 24, 45, and 66 (and Claims 25, 27-43, 46, 47, 49-65, and 68-88) patentably distinguish over Girod and Chung, taken alone or in proper combination, for at least the reasons stated for Claim 1.

Moreover, Applicants respectfully submit that Claim 15 further patentably distinguishes over Girod and Chung. The outstanding Office Action takes the position that Girod discloses storing a bit map of the parts of the material, which are to be modified by selecting a part or parts to be modified in accordance with the bit map. This outstanding Office Action states, "Girod discloses a bitstream thus encompassing various bitmaps with varying levels."[1] However, this does not mean that there is a disclosure of the bit map of the parts of the material which are to be modified and selecting a part or parts to be modified in accordance with the map. Thus, even if Girod is interpreted to disclose a bit stream having a bit map, there is no indication in Girod that there is a bit map which identifies the digital representations which are to be modified to form the watermark. Accordingly, Applicants respectfully submit hat Girod does not describe of suggest the claimed "storing a bit map of the part or parts of the material which are to be modified and selecting a part or parts to be modified in accordance with the map."

Furthermore, Applicants note that Official Notice may only be taken for facts outside of the record which are capable of instant and unquestionable demonstration as being "well-known" in the art. *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970). As

[1] Office Action, page 7.

set forth in MPEP §2144.03, if an applicant traverses an assertion made by an Examiner while taking official notice, the Examiner should cite a reference in support of their assertion.

In addition, Applicants respectfully traverse those grounds for rejection relying of Official Notice. Applicants do not consider the features for which Official Notice were taken to be "of such notorious character that official notice can be taken." Therefore Applicants traverse this assertion. "The examiner should cite a reference in support of his or her position."[2]

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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[2]MPEP 2144.03, page 2100-129, left column, second full paragraph of MPEP 2144.03.